Interagency cooperation and science keep the Buffalo River system free-flowing

By Faron Usrey

BUFFALO NATIONAL RIVER (Arkansas) provides a case study of how NPS science and monitoring played a role in the decision-making process to revoke a permit for a dam that would have affected park resources. The story begins in 1996 when a regional water district performed a water-supply analysis that recommended building a reservoir on Bear Creek—a large tributary to the mid-reaches of the Buffalo River—to meet the growing need for water in the area. Established in 1972 as the country's first national river, Buffalo National River is in a watershed of which about 61% is privately owned. Approximately 11% of the watershed is contained within the boundaries of the national river, and 28% is managed by other federal and state land management agencies. Local authorities applied for and received a permit from the U.S. Army Corps of Engineers (the Corps) to build a dam on Bear Creek. The Corps issued an environmental assessment (EA), which was open for public review under the National Environmental Policy Act (NEPA).

To understand the effects of the proposed impoundment on the river's flow and biota and to meet a public obligation under NEPA, park managers joined a multiagency effort with the U.S. Geological Survey (USGS), U.S. Fish and Wildlife Service, University of Arkansas, and independent natural resource professionals to ascertain quantifiable impacts on the river system. In 2002, USGS hydrologists determined that during times of low flow (August through October), as much as 25% of the flow below the Buffalo River's confluence with Bear Creek originates from Bear Creek. Concerns about the aquatic community's dependence on the creek's flow at these times generated several investigations. In 2002, after eight national and local environmental groups filed suit against the Corps, the permit approving the damming of Bear Creek was officially revoked. The Corps has agreed to hold any future water development permit decisions in abeyance until the National Park Service has made a Determination of Effect as required under Buffalo National River's enabling legislation.

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Monitoring results on the Buffalo River in Arkansas over a 10-year period prior to the EA strengthened arguments for further watershed protection by natural resource agencies through targeted conservation programs that stress the reduction of agricultural runoff. Monitoring results showed a decline in water quality on certain reaches of the river. This decline was the basis for cooperative studies among Buffalo National River, state agencies, the USGS, and local universities.

Although untamed rivers are part of our cultural and natural heritage, virtually every river in the lower 48 states is now regulated by dams, locks, or diversions. The Buffalo River is one of the few remaining free-flowing rivers, offering both swift-running and placid stretches. Recently, staff diligence and science kept a main tributary, Bear Creek, on Buffalo River free-flowing.

Researchers, who examined the effects of human activities and changes in land use on the river's natural resources, documented degradation. They reported that land-use changes, in particular the conversion of forest to permanent pasture, negatively impact the river's water quality, in-stream habitat, geomorphic structure, and aquatic communities. Funding from local universities and state and federal agencies—with the largest portion of the federal funding originating from the NPS Water Resources Division and the Natural Resource Preservation Program—covered the costs associated with these highly beneficial and timely scientific studies.

National Park Service science, vigilance, and cooperation with other agencies kept Bear Creek free-flowing. Being able to quantify ecosystem requirements of the river's flow with valid scientific results was critical in the decision. Because park managers at Buffalo National River were aware of community activities in the watershed and had been actively monitoring the river, park resources were preserved and the park's legal standing was strengthened. ■

faron_usrey@nps.gov
Aquatic Ecologist, Buffalo National River, Arkansas